



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,791	10/15/2001	Patricia A. Morris	CL1713 US NA	3776

23906 7590 12/23/2003

E I DU PONT DE NEMOURS AND COMPANY
LEGAL PATENT RECORDS CENTER
BARLEY MILL PLAZA 25/1128
4417 LANCASTER PIKE
WILMINGTON, DE 19805

EXAMINER

SINES, BRIAN J

ART UNIT PAPER NUMBER

1743

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,791

Applicant(s)

MORRIS, PATRICIA A.

Examiner

Brian J. Sines

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-94 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-94 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-6. 6) ☐ Other: ____

Art Unit: 1743

DETAILED ACTION

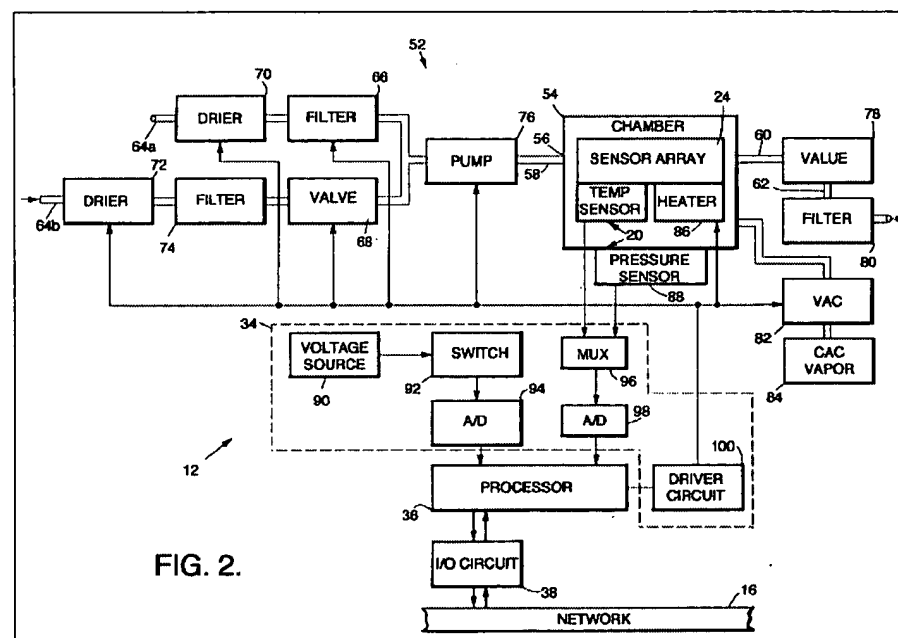
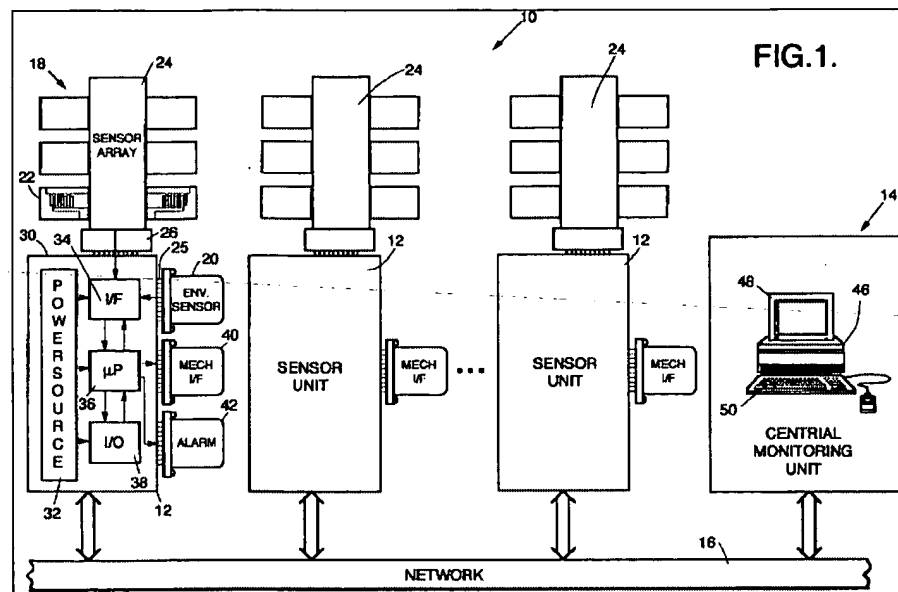
Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless—

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 39 and 52 – 94 are rejected under 35 U.S.C. 102(b) as being anticipated by Schatzmann *et al.* (U.S. Pat. No. 5,832,411 A). Regarding claims 1 – 9, 12 – 16, 19 – 22, 24 – 28, 31 – 37, 52 – 59, 61 and 63 – 67, Schatzmann *et al.* teach an apparatus comprising: an array (18) of at least two chemo/electro-active sensing materials connected in parallel circuitry (34); a means (14) for determining an electrical response of each sensing material; means (20) for temperature determination; a means (14) for digitizing the electrical responses from the array and the temperature determination means; and a means (14) for calculating and analyzing the responses from the array (see col. 3, line 45 – col. 12, line 6; figures 1 & 2). Regarding claims 10, 17, 29, 38 and 60, Schatzmann *et al.* teach that the electrical response comprises an analog voltage level (see col. 8, lines 27 – 43). Regarding claims 11, 18, 23, 30, 39 and 62, Schatzmann *et al.* teach the incorporation of metal oxide sensor elements (see col. 5, lines 1 – 17).



Regarding claims 1, 5, 6 – 9, 14 – 16, 19, 21, 22, 24, 27, 28, 31, 33 – 37, 52, 56 – 59, 61, 63 and 65 – 67, these claims recite various functional limitations, such as the electrical response characteristics of the sensing materials. In a claim drawn to an apparatus statutory class of invention, a functional limitation may not be divorced from any specifically recited structure or composition. A functional limitation is an attempt to define an apparatus by what it does,

Art Unit: 1743

rather than by what it is, *as evidenced by its specific structure* (emphasis added) (see MPEP § 2173.05(g)). Regarding product and apparatus claims, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (see MPEP § 2112.01). The Courts have held that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). The Courts have held that apparatus claims must be structurally distinguishable from the prior art in terms of structure, not function. See *In re Danley*, 120 USPQ 528, 531 (CCPA 1959); and *Hewlett-Packard Co. V. Bausch and Lomb, Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (see MPEP § 2114).

Regarding claims 2 – 6, 13, 14, 20, 21, 25, 26, 32, 33, 35, 53 – 57, 61, 64, 66 and 67 these claims are replete with indefinite process or use limitations, which do not further delineate the structure of the claimed apparatus from that of the prior art. Since these claims are drawn to an apparatus statutory class of invention, it is the structural limitations of the apparatus, as recited in the claims, which are considered in determining the patentability of the apparatus itself. These recited process or use limitations are accorded no patentable weight to an apparatus. For example, these claims recite how the apparatus is to be operated, such as situating the sensor array in a gas mixture having a temperature of about 400 °C during use or that the gas mixture is an emission from a combustion process, which do not impart any limitations to define the structure of the apparatus being claimed. Process limitations do not add patentability to a structure, which is not distinguished from the prior art. A recitation of the intended use of the

Art Unit: 1743

claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967); and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). The Courts have held that it is well settled that the recitation of a new intended use, for an old-product, does not make a claim to that old product patentable. See *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). The Courts have held that the manner of operating an apparatus does not differentiate an apparatus claim from the prior art, if the prior art apparatus teaches all of the structural limitations of the claim. See *Ex Parte Masham*, 2 USPQ2d 1647 (BPAI 1987) (see MPEP § 2114).

Regarding claims 69 – 94, as discussed above, Schatzmann *et al.* teach all of the structure of the apparatus provided in the claimed method, which merely recites the conventional operation of that apparatus. Regarding process or method claims, a prior art device anticipates a claimed process, if the device carries out the process during normal operation (see MPEP § 2112.02). The Courts have held that when a prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed that the device will inherently perform the claimed process. See *In re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 40 – 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schatzmann *et al.* in view of McGeehin *et al.* (WO 93/08467). Regarding claims 40 – 50, Schatzmann *et al.* teach an apparatus comprising: an array (18) of at least two chemo/electro-active sensing materials connected in parallel circuitry (34); a means (14) for determining an electrical response of each sensing material; means (20) for temperature determination; a means (14) for digitizing the electrical responses from the array and the temperature determination means; and a means (14) for calculating and analyzing the responses from the array (see col. 3, line 45 – col. 12, line 6; figures 1 & 2). Schatzmann *et al.* do not specifically teach the recited metal oxide materials for use in the sensing elements of a sensor array. However, Schatzmann *et al.* do teach the incorporation of metal oxide sensor elements with the disclosed sensing apparatus (see col. 5, lines 1 – 17). McGeehin *et al.* do teach the use of sensor arrays comprising individual sensing elements, which comprise different metal oxide materials, such as SnO₂ and Bi₂Sn₂O₇, which offer enhanced sensor response characteristics (see pp. 1 – 15; p. 15, lines 24 – 29). The Courts have held that the selection of a known material, based upon its suitability for the intended use, is within the ambit of a person of ordinary skill in the art. See *In re Leshin*, 227

Art Unit: 1743

F.2d 197, 125 USPQ 416 (CCPA 1960). Consequently, a person of ordinary skill in the art would have recognized the suitability of incorporating the teachings of the metal oxide sensing materials of McGeehin *et al.* with the sensing apparatus, as taught by Schatzmann *et al.* for the intended purpose of facilitating effective sensor operation (see MPEP § 2144.07). Furthermore, the Courts have held that the prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. See *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986) (see MPEP § 2143.02). In view of the teachings of McGeehin *et al.*, a person of ordinary skill in the art would accordingly have had a reasonable expectation of success of incorporating the use of these metal oxide materials to facilitate effective sensor operation. Therefore, it would have been obvious to a person of ordinary skill in the art incorporate the metal oxide materials, as taught and suggested by McGeehin *et al.*, as sensing elements in the apparatus, as taught by Schatzmann *et al.*, in order to provide a sensing apparatus having the advantages in optimal performance, as disclosed by McGeehin *et al.* Regarding claim 51, Schatzmann *et al.* teach that the electrical response comprises an analog voltage level (see col. 8, lines 27 – 43).

Regarding claims 40 and 45 – 50, these claims recite various functional limitations, such as the electrical response characteristics of the sensing materials. In a claim drawn to an apparatus statutory class of invention, a functional limitation may not be divorced from any specifically recited structure or composition. A functional limitation is an attempt to define an apparatus by what it does, rather than by what it is, *as evidenced by its specific structure* (emphasis added) (see MPEP § 2173.05(g)). Regarding product and apparatus claims, when the structure recited in the reference is substantially identical to that of the claims, claimed properties

Art Unit: 1743

or functions are presumed to be inherent (see MPEP § 2112.01). The Courts have held that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). The Courts have held that apparatus claims must be structurally distinguishable from the prior art in terms of structure, not function. See *In re Danley*, 120 USPQ 528, 531 (CCPA 1959); and *Hewlett-Packard Co. V. Bausch and Lomb, Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (see MPEP § 2114).

Regarding claims 42 – 45, 48 and 50, these claims are replete with indefinite process or use limitations, which do not further delineate the structure of the claimed apparatus from that of the prior art. Since these claims are drawn to an apparatus statutory class of invention, it is the structural limitations of the apparatus, as recited in the claims, which are considered in determining the patentability of the apparatus itself. These recited process or use limitations are accorded no patentable weight to an apparatus. For example, these claims recite how the apparatus is to be operated, such as situating the sensor array in a gas mixture having a temperature of about 400 °C during use or that the gas mixture is an emission from a combustion process, which do not impart any limitations to define the structure of the apparatus being claimed. Process limitations do not add patentability to a structure, which is not distinguished from the prior art. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA

1967); and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). The Courts have held that it is well settled that the recitation of a new intended use, for an old product, does not make a claim to that old product patentable. See *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). The Courts have held that the manner of operating an apparatus does not differentiate an apparatus claim from the prior art, if the prior art apparatus teaches all of the structural limitations of the claim. See *Ex Parte Masham*, 2 USPQ2d 1647 (BPAI 1987) (see MPEP § 2114).


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *Lewis et al.* (U.S. Pat. No. 5,571,401 A) teach sensor arrays incorporating the use of various conductive metal oxide materials (see col. 4, lines 7 – 65).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines, Ph.D. whose telephone number is (703) 305-0401. The examiner can normally be reached on Monday - Friday (11:30 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (703) 308-4037. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Jill Warden
Supervisory Patent Examiner
Technology Center 1700